

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : A47B 17/03 // A47C 7/54		A1	(11) International Publication Number: WO 91/14384
			(43) International Publication Date: 3 October 1991 (03.10.91)
(21) International Application Number: PCT/SE91/00202 (22) International Filing Date: 18 March 1991 (18.03.91) (30) Priority data: 9001006-7 21 March 1990 (21.03.90) SE		Published <i>With international search report. In English translation (filed in Swedish).</i>	
(71)(72) Applicants and Inventors: GUTKE, Lennart [SE/SE]; Engelbrektsgatan 35, S-411 37 Göteborg (SE). SCOTT, Runo [SE/SE]; Tornsgatan 6, S-334 00 Anderstorp (SE). (74) Agent: AWAPATENT AB; Box 53252, S-400 16 Göteborg (SE). (81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), BR, CA, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, DK (European patent), ES, ES (European patent), FI, FR (European patent), GA (OAPI patent), GB, GB (European patent), GR (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, PL, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US.			
(54) Title: FOREARM SUPPORT			
(57) Abstract <p>A forearm support intended for use in connection with e.g. desk work, consists of a first pivotal arm section (8) which is secured to a holder (2) mounted on a table top (1), and of a second pivotal arm section (19) which is connected to the first pivotal arm section (8) and is provided with a forearm support element (20). The two pivotal arm sections (8, 19) are arranged for mutual pivotal movements and for pivotal movements relatively to the holder (2). The first pivotal arm section (8) comprises an arm (12) having two mutually parallel end portions (15, 16) and an obliquely extending intermediate arm portion (17) interconnecting the two end portions. The two portions (15, 16) are rotatably mounted so as to be set and locked in the desired angular position in their respective one of housings (10, 11) which serve as pivot joints.</p>			

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	ES	Spain	MG	Madagascar
AU	Australia	FI	Finland	ML	Mali
BB	Barbados	FR	France	MN	Mongolia
BE	Belgium	GA	Gabon	MR	Mauritania
BF	Burkina Faso	GB	United Kingdom	MW	Malawi
BG	Bulgaria	GN	Guinea	NL	Netherlands
BJ	Benin	GR	Greece	NO	Norway
BR	Brazil	HU	Hungary	PL	Poland
CA	Canada	IT	Italy	RO	Romania
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic of Korea	SE	Sweden
CH	Switzerland	KR	Republic of Korea	SN	Senegal
CI	Côte d'Ivoire	LI	Liechtenstein	SU	Soviet Union
CM	Cameroon	LK	Sri Lanka	TD	Chad
CS	Czechoslovakia	LU	Luxembourg	TG	Togo
DE	Germany	MC	Monaco	US	United States of America
DK	Denmark				

FOREARM SUPPORT

The invention concerns a support on which the forearm of a person operating a computer, a typewriter or 5 performing other desktop operations, may rest during the work.

Devices for this purpose are known consisting of a first pivotal arm section which is secured to a table-top mounted holder and which is arranged for pivotal movement 10 about a vertical shaft. A second pivotal arm section which is mounted on the first pivotal arm section, is arranged for pivotal movement in a horizontal plane about the outer end of the first pivotal arm section and is provided with a support element on which rests the forearm 15 of a person working at the table-top.

With the aid of a forearm support of this kind, one on either side, persons working e.g. with computer terminals, may avoid that certain groups of muscles are exposed to unbalanced load with resulting musculo-skeletal 20 disorders, an affliction of which hitherto a large number of individuals have been the victims. The various types of supports available on the market comprise a pivotal arm section consisting of two parallel arms. In order to set the support proper at the vertical position which 25 corresponds to the correct and appropriate working position for the individual user, the pivotal arm section is adjustable with the aid of one or a couple of set screws. However, the number of possible positioning variations vertically are comparatively limited, which is 30 often rather unsatisfactory, particularly when, as often is the case with computers, the keyboard is positioned in a lower-level recess formed in the supporting table-top or when the keyboard is positioned on an extension table top. However, it is all important, in order to achieve the 35 adequate load relief on the forearm and as a result thereof on the neck and shoulders that one aims for, that it is possible to set the support in the correct

vertical position that brings about this relief.

This is obtained in accordance with the invention by means of a device which is of a more simple construction than prior-art constructions and which allows more

5 convenient and quicker positioning manoeuvres in order to achieve the optimum vertical height position in which the forearm support provides maximum load relief. The characterising features of this device appear from the appended claims.

10 The invention will be described in closer detail in the following with reference to the accompanying drawings, wherein

Fig. 1 is a perspective view of the forearm support in use, and

15 Fig. 2 shows the support in a lateral view in a certain vertical position with another, alternative vertical position being indicated in dash-and-dot lines.

A support holder 2 is mounted on a table top 1. The support holder 2 comprises a C-clamp of a structure 20 generally known per se and comprising two legs 3 and 4 which are joined together by a screw 5. An extra through hole 6 makes it possible to obtain a position of adjustment with a wider spacing between the legs 3, 4. A tightening screw 7 in threaded engagement with the clamp 25 leg 4 secures the holder 2 to the table top 1.

On clamp leg 3 is mounted a first pivotal arm section 8 in accordance with the invention for pivotal movement about a vertical shaft 9. The pivotal arm section 8 is formed with housings 10, 11, one at each end of the 30 pivotal arm 12 proper. The pivotal arm 12 is mounted in said housings 10, 11 so as to be pivoted and lockable therein in any desired angular position by means of a cone member 13 (only one of which is illustrated) and a tightening screw 14.

35 In accordance with the invention, the pivotal arm 12 comprises two mutually parallel end portions 15, 16 and an intermediate portion 17 extending obliquely between the

two end portions 15, 16. Owing to this configuration, it becomes possible, when the end portions 15, 16 are turned in their respective bearing housing 10, 11, to raise or lower the outer extremity portion to the desired vertical 5 level between the maximum highest and the maximum lowest positions.

To the outer housing 11 is securely attached a further housing 18. In the latter is received one end of a second pivotal arm section 19 which is arranged for 10 pivotal movement to the desired angular position relatively to the first pivotal arm section 8 and which is provided on its outer end with a forearm support element 20 arranged for turning movement. The support element preferably has a dish-shaped configuration in order to 15 provide some support also laterally during pivotal movements.

By using this equipment a person who is operating a keyboard, for instance as illustrated in Fig. 1, may relieve the load on his neck and shoulder muscles in a 20 very efficient manner. In order to adjust the vertical position of the forearm support element the screw 14 is unscrewed, thus untightening of the cone 13 somewhat. The same procedure is used as regards the housing 10. The pivotal arm 12 is then turned in one or the other 25 direction in such a manner that the pivotal arm section 19 together with the forearm support element 20 are raised or lowered, according to wish. When the desired position of adjustment is obtained, the end portions 15, 16 are again locked in position in their respective one of housings 10, 30 11.

It is likewise possible, having initially set the forearm support element 20 roughly in the desired vertical position to tighten the screw 14 only slightly, so that following a check of the vertical position further turning 35 of the pivotal arm 13 may be done with frictional resistance. In this way it becomes possible to obtain satisfactory adjustment rapidly and conveniently without

4

risk that the desired position inadvertently is altered as the screw 14 is tightened to its home position.

The device in accordance with the invention is easy to handle due to its simple and uncomplicated structure 5 and it may be manufactured at comparatively low costs. The design of the device is, however, not limited to that illustrated in the drawings but may be varied in many ways within the scope of the appended claims.

10

15

20

25

30

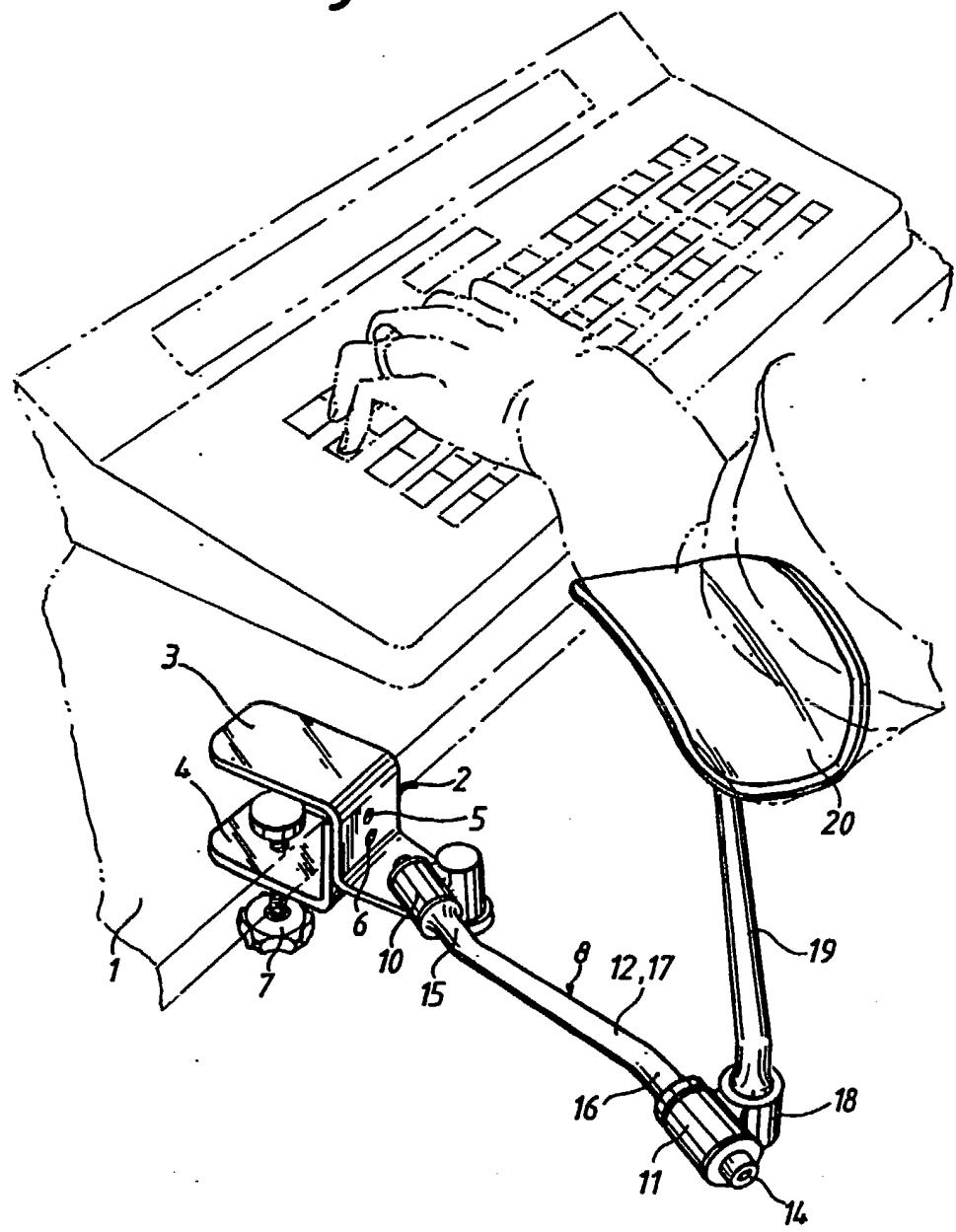
35

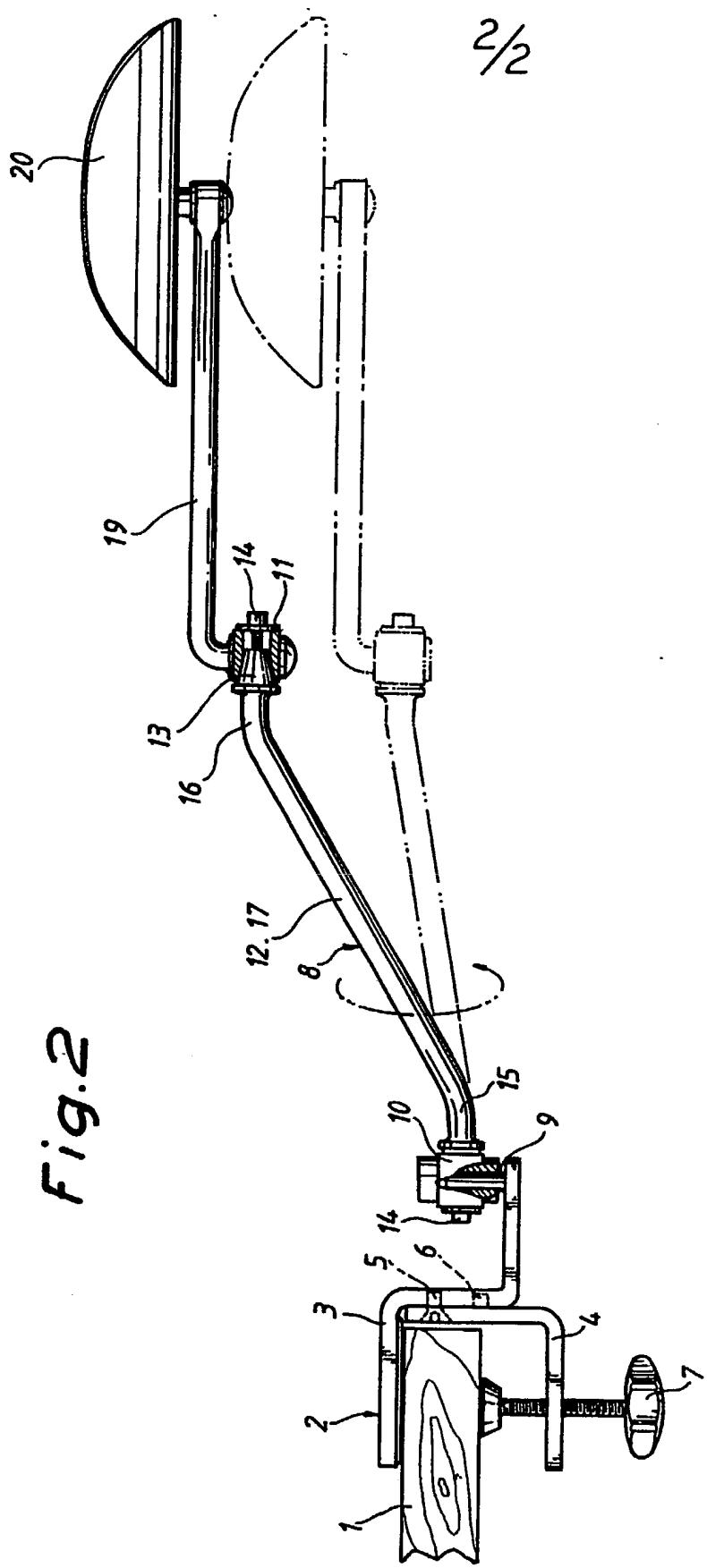
CLAIMS

1. A forearm support for use in connection with e.g. desk work, said support consisting of a first pivotal arm section (8) which is secured to a holder (2) mounted on a table top (1) and which is arranged for pivotal movement relatively to the holder (2) about a vertical shaft (9), and of a second pivotal arm section (19) which is mounted on the first pivotal arm section (8) for pivotal movement in a horizontal plane about the outer end of the first pivotal arm section (8) and provided with a support element (20) which supports the forearm of a person working at the table top (1), characterized in that the first pivotal arm section (8) consists of an arm (12) having two mutually parallel end portions (15, 16) and an intermediate portion (17) extending obliquely between the end portions, said two end portions (15, 16) being rotationally journaled in their respective one of two pivot joints (10, 11) and arranged to be retained in said joints in different angular positions.
2. A forearm support as claimed in claim 1, characterized in that the pivot joints (10, 11) may be set to allow arbitrary frictional resistance turning movement of the associated end portion (15, 16) in said joints (10, 11).

1/2

Fig. 1





INTERNATIONAL SEARCH REPORT

International Application No. PCT/SE 91/00202

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)⁶

According to International Patent Classification (IPC) or to both National Classification and IPC
IPC5: A 47 B 17/03 // A 47 C 7/54

II. FIELDS SEARCHED

Minimum Documentation Searched⁷

Classification System	Classification Symbols
IPC5	A 47 B; A 47 C; F 16 B; G 09 F

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in Fields Searched⁸

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹

Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
A	<p>CH, A, 268129 (ELISABETH WIELAND) 17 July 1950, see the whole document</p> <p>-----</p> <p>-----</p>	1,2

* Special categories of cited documents:¹⁰

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step
- "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search

2nd May 1991

Date of Mailing of this International Search Report

1990 -06- 14

International Searching Authority

SWEDISH PATENT OFFICE

Signature of Authorized Officer


Leif Vingård

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.PCT/SE 91/00202**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the Swedish Patent Office EDP file on 91-03-23
The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CH-A- 268129	50-07-17	NONE	